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NAVY EXPERIMENTAL DIVING UNIT PANAMA CITY FLA
EVALUATION OF HEALTHWAYS SEA VIEW PRESSURE/DEPTH GAUGE MODEL 162--ETC(U)
MAR 76 D J SCHMITT
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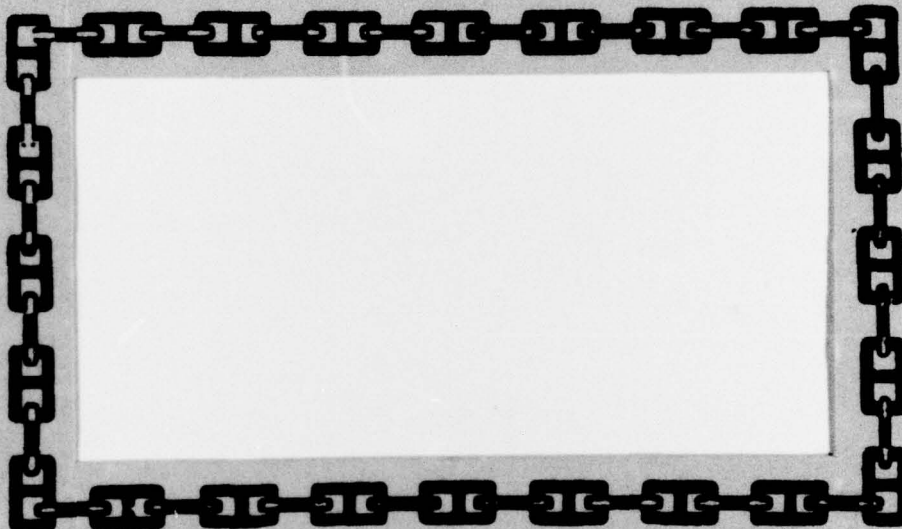
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NAVY EXPERIMENTAL DIVING UNIT
REPORT 9-76

6 EVALUATION OF HEALTHWAYS SEAVIEW PRESSURE/
DEPTH GAUGE MODEL 1628 •

10 D. J. / SCHMITT

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ABSTRACT

Test and evaluation of the Healthways Seaview pressure/depth gauge, model 1628, was conducted at the Navy Experimental Diving Unit in March 1976.

Two units were submitted by the Healthways Company and both units were tested for both depth and pressure reading accuracy.

Because of the advantages of the two gauges combined into one unit and because of the test results, the Healthways Pressure/Depth Gauge is recommended for Navy use and for inclusion on the NAVSEAINST 9597.1 list.

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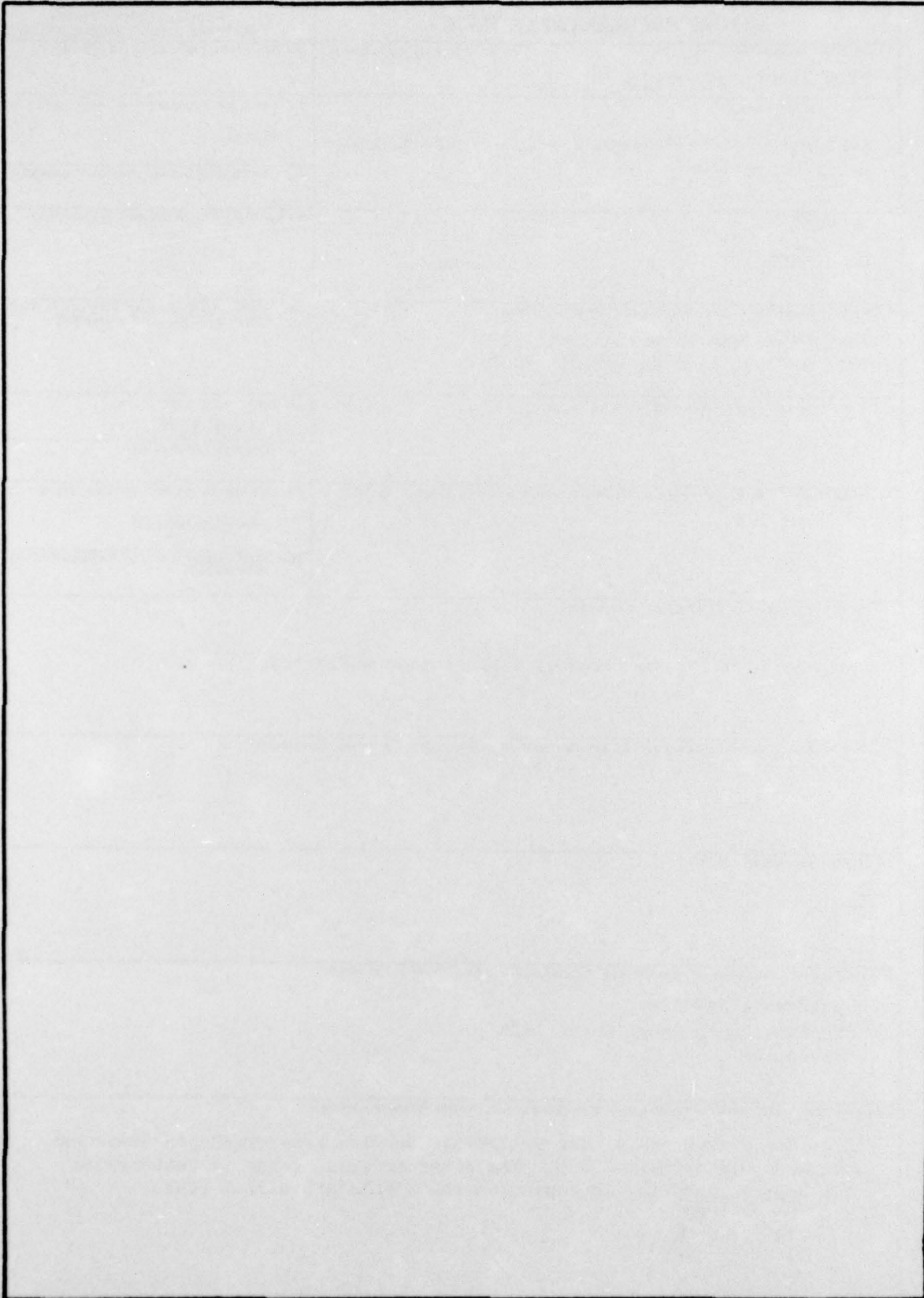
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INTRODUCTION

The Healthways Diving Company submitted two Healthways Seaview pressure and depth gauges, model 1628, for test and evaluation by the Navy Experimental Diving Unit in March 1976. This model gauge incorporates both a pressure gauge and a depth gauge into one compact unit, with pressure displayed on one side and depth on the other.

The gauges submitted were tested to 250 feet of sea water (fsw) for possible placement on the Navy Approved List of Diving Equipment, NAVSEAINST 9597.1.

TEST EQUIPMENT

Testing the Healthways pressure/depth gauges required the use of Amthor Testing Instrument Company deadweight tester 472, with a range from 0 to 3000 psig; the Bethlehem chamber, model 183.61HP, and test gauge 25546-25011-GAG, calibrated 1 March 1976. Test gauge calibration is given in Figure 1.

TEST PROCEDURE

The gauges were set up as shown in Figure 2. Tests were made at 0, 100, 250, 500, 750, 1000, 1500, 2000, 2500, and 3000 psig.

For depth testing, the gauges were placed in a pan and covered with fresh water. The pan was then placed in the Bethlehem chamber, which was then pressurized with high-pressure air. The gauges were tested to 250 fsw. Gauge readings were achieved by looking through the chamber window.

RESULTS

Results of the pressure tests are given in Table 1. Table 2 presents the results of the depth tests for each of the Healthways pressure/depth gauges.

MAN-HOURS REQUIRED FOR TEST

Man-hours required to complete these tests were as follows:

	<u>Man-hours</u>
Chamber operation, 3 men, 2 hours	6
Deadweight testing, 1 man, 4 hours	4
Reporting manuscript, 1 man, 6 hours	6
Duplicating, 1 man, 8 hours	<u>8</u>
TOTAL	24 Man-hours

CONCLUSIONS AND RECOMMENDATIONS

Although there are now seven different types of pressure gauges on the Navy Approved List, this gauge is different, inasmuch as it incorporates both a pressure gauge and a depth gauge into one compact unit. Test results also support a recommendation that the Healthways Seaview pressure/depth gauge, model 1628 be approved for Navy use. It is recommended that this gauge be placed on the NAVSEAINST 9597.1 list.

TEST GAUGE

PART NUMBER 25546-25011 GAG

SERIAL NUMBER 10,52-1

PRESSURE RANGE 200 P.S.I. ACCURACY \pm 1/4 % FULL SCALE (\pm -1.1 P.S.I.)

CALIBRATION

INCREASING PRESSURE		
Applied Press.	Indicated Press.	Difference
0	0.00	0.00
30	30.26	+ .26
60	59.63	- .37
90	89.66	- .34
120	119.7	- .3
150	149.5	- .5
180	178.89	-1.11
200	198.9	-1.1

FIGURE 1. CALIBRATION OF TEST GAUGE

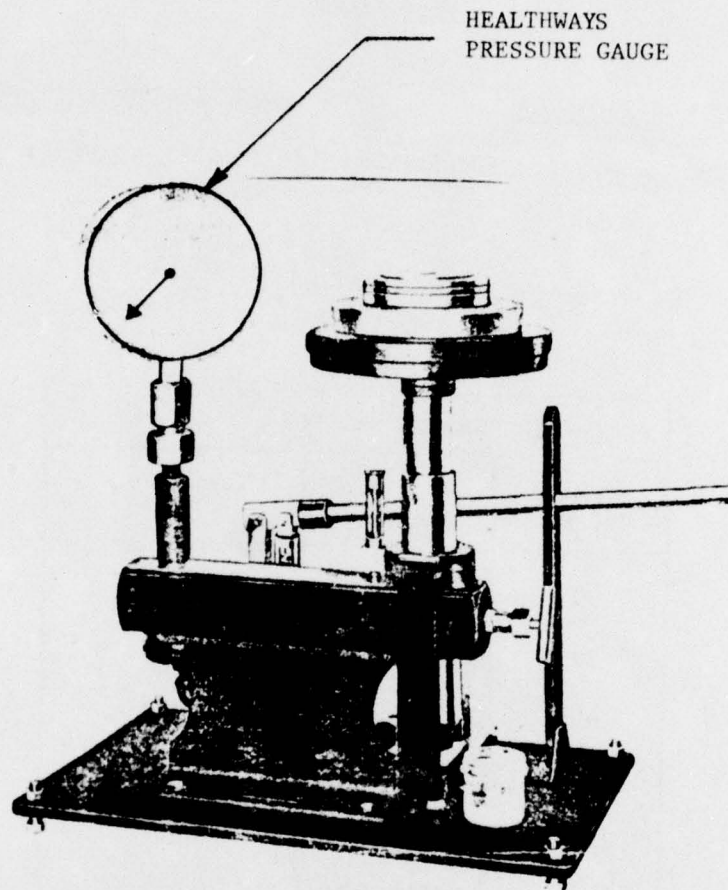


FIGURE 2. TEST SETUP WITH DEADWEIGHT TESTER

TABLE 1
COMPARISON OF HEALTHWAYS PRESSURE GAUGE READINGS WITH TESTER

Tester Setting (psig)	Healthways Gauge 1	Healthways Gauge 2
0	0	0
100	100	100
250	250	250
500	500	500
750	760	755
1000	1010	1000
1500	1520	1500
2000	2075	2000
2500	2600	2500
3000	3100	3025
0	0	0

TABLE 2

TEST DEPTH READINGS OF HEALTHWAYS DEPTH GAUGES, MODEL 1628

Depth (FT)	Test Run 1		Test Run 2	
	Gauge 1	Gauge 2	Gauge 1	Gauge 2
Surface	0	0	0	0
20	20	20	20	20
50	50	50	50	50
70	70	70	70	70
80	80	80	80	80
100	100	100	100	100
150	148	150	150	150
200	200	200	200	200
250	250	250	250	250
150	150	150	150	150
100	100	100	100	100
50	50	50	50	50
Surface	0	0	0	0